## Claims

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1. A process for producing a catalyst for gas-phase oxidations, which comprises weighing a particulate inert support having a total mass of  $M_{support}$  into a fluidized-bed apparatus,

providing an aqueous suspension of a catalytically active material or sources thereof and a binder having a binder content of  $B_{susp}$ ,

fluidizing the inert support by introduction of a gas stream heated to a temperature of  $T_{gas}$  at a flow rate of  $Q_{gas}$ , and

spraying the suspension at a rate of  $Q_{susp}$  onto the fluidized inert support,

wherein  $Q_{gas}$ ,  $Q_{susp}$ ,  $B_{susp}$ ,  $M_{support}$  and  $T_{gas}$  are selected within the ranges

 $3000 \le Q_{gas} \text{ [m}^3/\text{h]} \le 9000,$   $2 \le B_{susp} \text{ [% by weight]} \le 18,$  $75 \le T_{gas} \text{ [°C]} \le 120$  1000 ≤  $Q_{susp}$  [g/min] ≤ 3500, 60 ≤  $M_{support}$  [kg] ≤ 240.

so that a parameter K defined as

20  $K = 0.020 Q_{gas} - 0.055 Q_{susp} + 7.500 B_{susp} - 0.667 M_{support} + 2.069 T_{gas} - 7$ 

satisfies the relationship  $127.5 \le K \le 202$ .

2. The process according to claim 1, wherein the parameter K is in a range  $136.0 \le K \le 193.5$  and

 $4500 \le Q_{gas}$  [m³/h] ≤ 7500, 5 ≤  $B_{susp}$  [% by weight] ≤ 15,  $80 \le T_{gas}$  [°C] ≤ 115. 1500  $\leq Q_{susp}$  [g/min]  $\leq$  3000, 100  $\leq M_{support}$  [kg]  $\leq$  200,

30 3. The process according to claim 2, wherein the parameter K is in a range  $143 \le K \le 184.5$  and

 $5500 \le Q_{gas} \text{ [m}^3/\text{h]} \le 6500,$  $6 \le B_{susp} \text{ [% by weight]} \le 11$   $2000 \le Q_{susp}$  [g/min]  $\le 2500$ ,  $120 \le M_{support}$  [kg]  $\le 180$ ,

 $90 \le T_{gas} [^{\circ}C] \le 115.$ 

4. The process according to any of claims 1 to 3, wherein the gas which is introduced is air.

5. The process according to any of claims 1 to 4, wherein a second aqueous suspension of catalytically active material and binder is provided and is sprayed onto the fluidized support which has been coated with the first suspension.

6. The process according to claim 5, wherein the support which has been coated

AE 20030697

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September 26, 2003

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with the first suspension is dried before the second suspension is sprayed onto it.

- 7. The process according to any of claims 1 to 6, wherein the particulate inert support is provided in the form of spheres, cylinders, rings or columns, preferably with dimensions of from 5 to 15 mm.
- 8. The process according to any of claims 1 to 7, wherein the fluidized-bed apparatus is a container for accommodating the particulate support in whose lower region a dish-like depression is provided and which comprises a central tube for introducing the gas which extends essentially axially downward in the container and opens into the depression, an essentially annular deflection shield which is fixed to the central tube in the upper region of the container and a guide ring which is located in the lower region of the container and surrounds the central tube essentially concentrically over part of its length and means for spraying-in the first and, if applicable, second suspension.
  - 9. The process according to claim 8, wherein the first or second suspension comprises  $TiO_2$  and  $V_2O_5$  particles, where at least 90% by volume of the  $V_2O_5$  particles have a diameter of 20  $\mu$ m or less and at least 95% by volume of  $V_2O_5$  particles have a diameter of 30  $\mu$ m or less.
  - 10. The process according to any of claims 1 to 7, wherein  $V_2O_5$  particles or dissolved vanadium is used for the first or second suspension.
- 25 11. The use of the catalyst prepared according to any of claims 1 to 10 for preparing phthalic anhydride from o-xylene, naphthalene or mixtures thereof.